
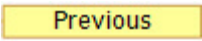


“The Case of Catalase”

Pre-Lab Instructions

In this activity we will be examining enzymes and the factors that affect their rates of reaction. You will have the opportunity to carry out experiments in a virtual laboratory utilizing the enzyme Catalase.

1. Access the Lab Module by browsing to:
<http://www.scopezoom.com/enzyme/page1.htm>
2. Please read the information in each page thoroughly.
3. Please use only the  Continue and  buttons to navigate from one page to the next. You may use Play and Activation buttons in the simulated lab scenarios, but do not engage with other buttons (especially in the explanation pages) so as not to lose track on the module.
4. You will have an opportunity to engage in 3 Lab experiments, examining the effects of different variables on Catalase Activity. After each experiment is complete remember to collect and input the results in your data collection sheet attached before proceeding.
5. The last module (the Bio 114 module) requires you to click on the animated graduated cylinder, test tubes and pipette to carry out the lab tasks. You may answer the questions at the end to check your understanding, but you do not have to submit them.

Data Collection Sheet**1. Effect of pH on Enzyme activity.**

Sample Substrate Selected: _____

pH values	Rate of reaction measured as: -Product Formed <input type="checkbox"/> -Substrate Left <input type="checkbox"/>

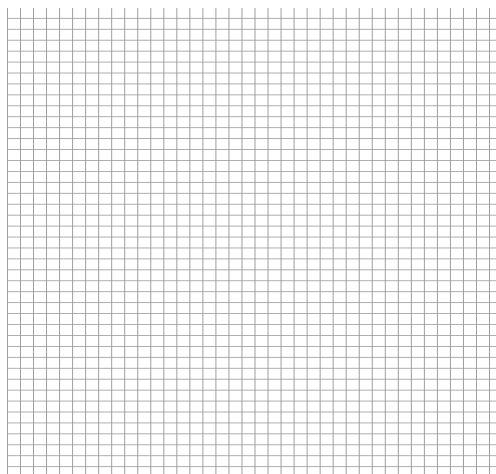
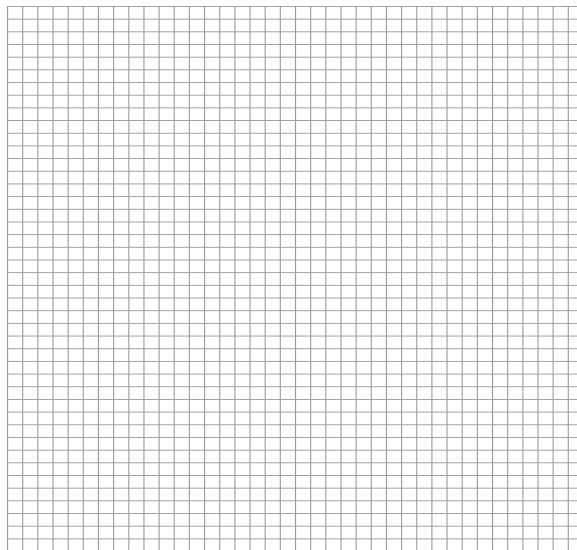
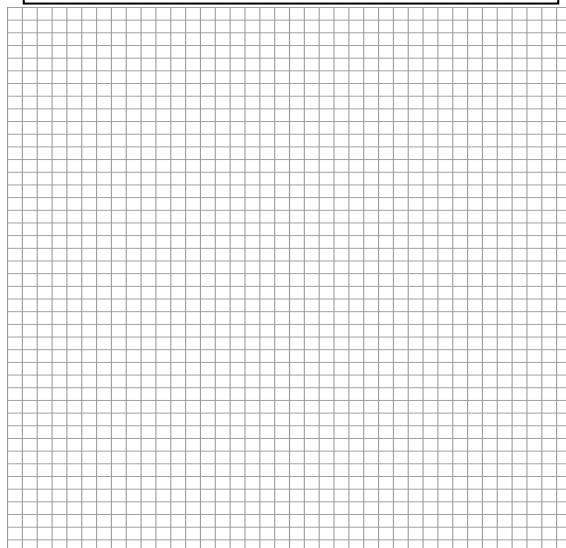
Complete a rough sketch of your results

2. Other Variable effect on Enzyme Activity

Other Variable: _____ Values.	Rate of reaction measured as: -Product Formed <input type="checkbox"/> -Substrate Left <input type="checkbox"/>

3. Effect of Temperature on Enzyme Activity

Temperature	Rate of reaction measured as: -Product Formed <input type="checkbox"/> -Substrate Left <input type="checkbox"/>



Questions

- 1) What did you notice about the activity of catalase as pH values became acidic or basic? What was the optimal pH value for catalase function?

- 2) How did the other variable you investigated affect catalase activity?

- 3) Which temperature treatment led to the higher reaction rate? How many ml of KMnO_4 did you need to use to saturate this reaction?

- 4) Explain what you observed about catalase activity as temperature increased.

- 5) Of the three variables you investigated which experimental setup was a good illustration of substrate saturation? Explain.